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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,686	09/17/2003	Knut Behnke	81700/LPK	4059

7590 10/26/2004

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EXAMINER	
LEE, PETER	

ART UNIT	PAPER NUMBER
2852	

DATE MAILED: 10/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/664,686	BEHNKE ET AL.	
	Examiner	Art Unit	
	Peter Lee	2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5,7 and 9-12* is/are rejected.

7)☒ Claim(s) *4,6,8 and 13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/17/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 5, 7, 9, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Merle (US pn 5235393). Merle teaches an apparatus for fusing toner images to a receiving sheet (abstract first sentence) for use in an image forming apparatus (Fig. 1) with the fusing apparatus comprising: an air cooling device (Fig. 3 part 80) for cooling the receiving sheet with compressed air (ie. coolant) after fusing the toner onto the sheet (col. 3 line 66 – col. 4 line 2), the air cooling device including a nozzle (Fig. 5 part 86) (ie. flow passage) for blowing the coolant to the sheet, with the said nozzle being of conical shape that narrows at its outlet to increase the speed of the air coming out (Fig. 5 part 82; col. 4 lines 59-65) (ie. increase velocity of coolant).

As to claim 2, Merle further teaches air being fed into the air cooling device by a centrifugal blower (ie. swirler) which will aid in the swirl flow of the air (ie. coolant) (col. 4 lines 55-57).

Merle further teaches the limitation of an air supply plenum (col. 4 line 55) in the air cooling device. By definition a plenum is a container that holds air at a greater pressure than the outside temperature (ie. producing compressed air).

Merle teaches the limitation of the possibility of having the cooling device, which consists of the pressurized air supplying plenum, on both sides of a receiving sheet (col. 6 lines 8-11) (ie. compressed air device under the sheet).

Merle teaches the limitation of a fixing apparatus comprised of a pressure roller and heated roller (Fig 1 parts 42 and 32 respectively; note col. 3 lines 46-50) (ie. method for fixing toner to a sheet), whereas air is fed into a plenum (compressed air container) by a centrifugal blower (ie. swirling coolant) and then this air is directed into a nozzle which narrows at its outlet to produce an increase in the air flow out of the nozzle and onto the sheet being cooled (col. 4 lines 59-65) (ie. discharging coolant onto sheet with increased velocity).

As to claim 12, Merle teaches the use of the air blowing cooling device being applied to a single side of the sheet, however it is also taught that it is possible to apply this device on both sides of the sheet (col. 6 lines 8-10). By applying the air cooling device on both sides of the sheet, the means will be essentially the same as the means seen in the application and therefore it is feasible to expect this embodiment to achieve touchless transport of the sheet while cooling at the same time.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merle in view of Carlson et al. (US pn 5404934). Merle teaches all of the limitations of the claims from which claim 3 depends upon. Merle also teaches the air cooling device having various nozzles (Fig. 4 parts 86; note col. 4 lines 28-31) (ie. ports).

Merle does not teach the use of dampers for controlling the covering and uncovering of the nozzle openings. Merle also does not teach the use of measuring the temperature of the sheet to control the air coolant.

Carlson teaches a retrofit air conditioning system which will connect to an existing cooling system that includes a damper assembly (Fig. 7 part 113) to control the air flow and pressure within the system (note: first half of abstract). These ducts are said to be controlled by having a thermostat (Fig. 8 part 126; note col. 8 final paragraph) (ie. temperature measuring means) that will detect the internal temperature and feed it back to a controller (Fig. 8 part 123) that will in turn adjust the dampers to obtain the desired air flow and temperature. Although Carlson's invention pertains to an air conditioning system, the problem of controlling air flow in a sheet cooling device as found in Goto will still significantly be solved by using the dampers and temperature sensors found in Carlson's invention.

As to claim 3, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the air conditioning system as seen in Carlson in conjunction with the air coolant device seen in Merle because it brings the added benefits of the dampers and thermostat. One of ordinary skill in the art would have been motivated to include the dampers found in Carlson in order to effectively control the air flow and temperature of the

device by either opening the flow ways for additional cooling or closing them to inhibit cooling (col. 7 lines 27-35; also note col. 8 first paragraph).

As to claim 10, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the air conditioning system as seen in Carlson in conjunction with the air coolant device seen in Merle because it brings the added benefits of the dampers and thermostat. One of ordinary skill in the art would have been motivated to include the temperature sensing thermostat as a means to control the air flow because it allows for the automatic adjustment of the dampers to open and close as needed to maintain the desired air pressure and temperature as determined by the controller; this in turn leads to operational, cost, and space savings (col. 7 lines 30-39).

4. Claim11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Merle in view of Kuwabara (US pn 6580884). Merle teaches all of the limitations of the claims from which 10 and 11 depend upon. Merle also does not teach the coolant control being controlled according to a sheet type.

Kuwabara teaches the use of a "thin-paper mode" as part of a cooling apparatus to be utilized when using such a thinner sheet than normal (col. 5 lines 7-14). This mode activates a separate cooling fan operation (ie. coolant is controlled according to sheet type).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to control the air coolant according to the sheet thickness (ie sheet type) as done in Kuwabara when developing an air cooling device as seen in Merle. Again, to reiterate the motivation in combining the inventions of Kuwabara into Merle, it is noted that although the

cooling apparatus in Kuwabara pertains to the entire internal structure of the image forming apparatus, it is known that the internal components of such an apparatus are in such close confines so that the overall cooling apparatus of Kuwabara would effectively cool the sheet as the sheet cooling device in Merle. One of ordinary skill in the art would have been motivated to use the sheet thickness as a means for controlling the air coolant because toner particles adhere to the sheet differently when the sheet is thinner, and therefore unique air flow operations must be applied to ensure image quality (note Kuwabara col. 5 lines 14-25).

Allowable Subject Matter

5. Claims 4, 6, 8, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The mentioned claims include limitations that could not be found in the cited references.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kowalski et al. (US pn 6226474) teaches a cooling device for post fixing cooling of the sheet that includes upper and lower cooling fans that can also provide the touchless air transport of the sheets.

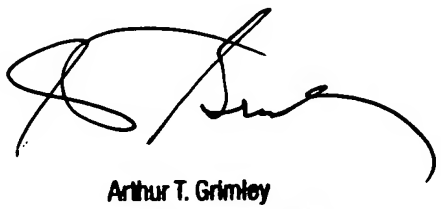
Thomas (US pn 6094560) teaches a moisturizing cooling/uncurling apparatus to be applied to the sheet after fixing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Lee whose telephone number is 571-272-2846. The examiner can normally be reached on mon-fri 9:00 am-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on 571-272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PL 10/13/04



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